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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/636,826	08/14/2000	Eike Duweing	50615	8623

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KEIL & WEINKAUF
1350 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036

EXAMINER

COLLINS, CYNTHIA E

ART UNIT PAPER NUMBER

1638

DATE MAILED: 04/23/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/636,826

Applicant(s)

DUWEING ET AL.

Examiner

Cynthia Collins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2000 and 22 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 2,8,12,42 and 45-48, 50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-11,13-41,43,44,49 and 51-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION***Election/Restrictions***

Applicant's election with traverse of Group I, claims 1, 3-7, 9-11, 13-41 and 43-54, drawn to a plant V-ATPase promoter of the *B. vulgaris* V-ATPase subunit c isoform 2 set forth in SEQ ID NO:1, in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the inventions are not independent and distinct. This is not found persuasive because an application may properly be required to be restricted to one of two or more claimed inventions if they are either independent or distinct (MPEP § 803).

Additionally, a review of the restriction requirement indicates that claims 45, 46, 47, 48 and 50 were mistakenly restricted to Groups I-IV. Because claims 45-48 are drawn to the use of a plant V-ATPase promoter that is deleted or hybrid, claims 45-48 properly belong in Group IV, which is drawn to a DNA construct with a plant V-ATPase promoter that is deleted or hybrid. Because claim 50 is drawn to the use of a plant V-ATPase promoter wherein at least one further pyrimidine stretch is inserted into the promoter, claim 50 properly belongs in Group V, which is drawn to a DNA construct with a plant V-ATPase promoter wherein at least one further pyrimidine stretch is inserted into the promoter. Accordingly, claims 1, 3-7, 9-11, 13-41, 43-44, 49 and 51-54, and a plant V-ATPase promoter of the *B. vulgaris* V-ATPase subunit c isoform 2 set forth in SEQ ID NO:1, are examined on the merits in the instant office action. Claims 2, 8, 12, 42, 45-48 and 50, and the plant V-ATPase promoters of the *Beta vulgaris* V-ATPase subunit A set forth in SEQ ID NO:3 and the *B. vulgaris* V-ATPase subunit c isoform 1 set forth in SEQ ID NO:2 are withdrawn from consideration as being drawn to nonelected inventions.

The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

An initialed and dated copy of Applicant's IDS form 1449, Paper No. 4, is attached to the instant Office action.

Specification

The specification is objected to because it lacks a brief description of the drawings.

The abstract of the disclosure is objected to because it is not in the form of a single paragraph. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claims 6 and 49 are objected to for reciting nonelected inventions. Appropriate correction is required.

Claim 31 is objected to because of the following informalities: there is no article before the word "method". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3-5, 7, 9-10, 13-23 and 51-54 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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The claims are drawn to a DNA construct with a plant V-ATPase promoter operatively linked to a heterologous gene, including an expression cassette, a recombinant vector and a shuttle vector, as well as a microorganism transformed with the recombinant vector and a transgenic plant or plant cell whose genome encompasses the DNA construct.

The specification describes three beet plant V-ATPase promoters: the promoter of the *Beta vulgaris* V-ATPase subunit A set forth in SEQ ID NO:3, the promoter of the *B. vulgaris* V-ATPase subunit c isoform 1 set forth in SEQ ID NO:2, and the elected promoter of the *B. vulgaris* V-ATPase subunit c isoform 2 set forth in SEQ ID NO:1 (pages 22-23 and 36). This does not constitute a substantial portion of the genus that comprises plant V-ATPase promoters. The claimed genus encompasses many plant V-ATPase promoter sequences, including those yet to be discovered. The disclosure of only three plant V-ATPase promoters from a single plant species does not provide an adequate description of the claimed genus, and in view of the level of knowledge and skill in the art, one skilled in the art would not recognize from the disclosure that the applicant was in possession of the genus that comprises plant V-ATPase promoters (see Written Description Guidelines, Federal Register, Vol. 66, No. 4, January 5, 2001, pages 1099-1111).

Claims 1, 3-7, 9-11, 13-41, 43-44, 49 and 51-54 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for DNA constructs comprising the elected promoter of the *B. vulgaris* V-ATPase subunit c isoform 2 set forth in SEQ ID NO:1, expressing a heterologous gene, and producing a recombinant protein, does not reasonably provide enablement for DNA constructs comprising plant V-ATPase promoters, or plants, plant

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cells or protoplasts which are resistant to biotic or abiotic stress, or salt stress. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claims are drawn to DNA constructs comprising a plant V-ATPase promoter operatively linked to a heterologous gene. The claims are also drawn to a microorganisms and a plant, plant cell or protoplast comprising said construct. Additionally, the claims are drawn to a method for controlling the expression of a heterologous gene, a method for producing a recombinant protein, and plants, plant cells or protoplasts which are resistant to biotic or abiotic stress, or salt stress.

The specification is enabling for the elected promoter of the *B. vulgaris* V-ATPase subunit c isoform 2 set forth in SEQ ID NO:1, but is not enabling for any plant V-ATPase promoter. The specification discloses the isolation of a genomic clone of *B. vulgaris* V-ATPase subunit c isoform 2 as set forth in SEQ ID NO:1, and the cloning of a 2010 base pair promoter fragment from the genomic clone, said promoter fragment comprising nucleotides -1923 to +87 relative to the transcriptional start site (+1) of the genomic clone (page 36). The specification also discloses that this fragment has promoter function as evidenced by the expression in *B. vulgaris* cells of a LUC reporter gene operatively linked to the fragment (pBVA/16-2 page 40 Table 3, and c2 page 41 Table 4). The specification does not disclose the isolation of V-ATPase promoters from other plants. While one of skill in the art could potentially isolate the genomic clones of other plant V-ATPase genes, or additional *B. vulgaris* V-ATPase genes, by hybridization with the disclosed *B. vulgaris* V-ATPase sequences, the specification does not

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provide sufficient guidance for one of skill in the art to determine without undue experimentation what fragment of a gene so isolated would have promoter function.

The specification is enabling for a functional promoter of the *B. vulgaris* V-ATPase subunit c isoform 2 set forth in SEQ ID NO:1, but is not enabling for any specific means of controlling the function of that promoter. The specification discloses the cloning of a 2010 base pair promoter fragment from the genomic clone, and discloses that this fragment has promoter function as evidenced by the expression in *B. vulgaris* cells of a LUC reporter gene operatively linked to the fragment (pBVA/16-2 page 40 Table 3, and c2 page 41 Table 4). The specification does not disclose that the expression of a heterologous gene operatively linked to this promoter fragment would be controlled in any way by any particular biotic or abiotic stress. Although the specification does disclose that salt and wounding induce RNA expression from the *B. vulgaris* V-ATPase subunit c isoform 2 gene in situ (Figure 9C and Figure 10), the specification does not disclose whether the isolated promoter fragment responds to salt or wounding. The specification asserts that Figure 9 demonstrates the effect of salt on the function of the isolated promoter, and refers on page 45 to Figure 9 for support, but the only Figure 9 available to the Examiner appears to be a Northern blot of total RNA expressed from the native gene in situ, labeled as Figure 9C. While one of skill in the art could readily transform plants with the disclosed promoter fragment and express a heterologous gene, it would require undue experimentation for one of skill in the art to determine how to select and use a biotic or abiotic stress to control the expression of the heterologous gene, because the specification provides no guidance with respect to which stress to employ, or with respect to how much stress to employ, so that the expression is subject to the control of one skilled in the art. Even though the specification discloses salt and wounding stress

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induction of RNA expression from the *B. vulgaris* V-ATPase subunit c isoform 2 gene in situ, it does not necessarily follow that RNA expression from any isolated fragment of that promoter will also be induced by salt and wounding stress, or other types of stress. For example, if the isolated promoter fragment lacks the stress inducible structural elements possessed by the native promoter, the isolated promoter fragment will not be stress inducible. Likewise, since different types of structural elements within a promoter may mediate different types of stress induction, a promoter induced by one type of stress, such as salt stress, may not be inducible by another type of stress, such as heat stress. The specification does not disclose the number and nature of such elements, if any, that are in the elected promoter.

The specification is enabling for a transgenic plants and cells comprising the promoter of the *B. vulgaris* V-ATPase subunit c isoform 2 set forth in SEQ ID NO:1, but is not enabling for plants or cells that are resistant to any biotic or abiotic stress, or to salt stress. As discussed *supra*, the specification does not disclose any specific means of controlling the function of the enabled promoter. Additionally, the specification does not disclose how to make and use any plant that is resistant to any specific type of biotic or abiotic stress, or to salt stress. While one of skill in the art could readily transform plants with the disclosed promoter fragment and express a heterologous gene, it would require undue experimentation for one of skill in the art to determine which heterologous gene to express such that the resultant transgenic plants are resistant to biotic or abiotic stress or salt stress. The specification does not disclose the expression of any specific heterologous gene whose expression confers resistance to biotic or abiotic stress or salt stress. The specification provides no guidance with respect to whether and under what conditions any particular stress resistance gene might be expressed from the elected promoter such that the

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resultant transgenic plants are resistant to biotic or abiotic stress or salt stress. For example, it may be necessary to express a particular stress resistance gene at particular level of expression and/or in a particular tissue in order to confer stress resistance. If the elected promoter were unable to express a particular stress resistance gene at the required level and/or in the relevant tissue, the resultant transgenic plants would not be resistant to biotic or abiotic stress or salt stress, notwithstanding the ability of the elected promoter to function as a promoter per se.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-7, 9-11, 13-28, 31-36, 39-41, 43-44, 49 and 51-54, and claims 29-30 and 37-38 dependent thereon, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite in the recitation of "with" before "a plant V-ATPase promoter. It is unclear in what way the DNA construct is "with" the promoter. It is suggested that the claim be amended to recite "A DNA construct comprising a plant V-ATPase promoter".

Claim 1 is indefinite in the recitation of "its functional equivalent". It is unclear whether "functional equivalent" refers to the promoter or to a DNA construct. If "functional equivalent" refers to the promoter, does "functionally equivalent" mean any level of promoter activity, or does it mean the same level of promoter activity?

Claims 1, 10, 24, 28, 43 and 44 are indefinite in the recitation of "a gene". The word implies DNA existing in nature that includes coding regions as well as noncoding regions such

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as enhancers, promoters and introns. It is suggested that the claims be amended to recite such language as "an isolated nucleic acid", or "an isolated nucleic acid encoding".

Claims 3-5, 18-19, 25-27 and 33-35 are indefinite in the recitation of "derived". It is unclear how much of the promoter is derived from plants, or how much of the cell or protoplast is derived from a plant. It is suggested that the claims be amended to recite "obtained" in place of "derived". It is also suggested that claims 3 and 4 be amended to recite "obtained from a dicotyledonous plant" and "obtained from a monocotyledonous plant".

Claims 3-7, 9-10, 13-15, 17, 20, 24, 28, 40, 41, 43 and 51-54 are indefinite in the recitation of the indefinite article "a" before "DNA". It is suggested that the claims be amended to recite "the DNA".

Claim 5 is indefinite in its recitation of specific plants. It is unclear whether the promoter is derived from the specific plants listed, or from specific plant organs such as a fruit (tomato) or a root (carrots). It is suggested that the claim be amended to recite "obtained from plants selected from the group consisting of".

Claim 5 recites monocotyledonous as well as dicotyledonous plant species. There is insufficient antecedent basis in claim 3 for monocotyledonous plant species.

Claims 6, 11 and 49 are indefinite in the use of brackets. Brackets are reserved for items which are to be deleted from claims. It is also unclear whether the items in the brackets are claim limitations. It is suggested that the claims be amended to remove the brackets.

Claims 7, 13 and 20 are indefinite in the recitation of "encompasses". The scope of the claims is unclear. It is suggested that the claims be amended to recite "comprises" or "consists of".

Claim 7 is indefinite in the recitation of "different manner". the manner of the first promoter is not recited in claim 1, so it is unclear how the manner of regulation of the second promoter would be different.

Claim 10 is indefinite in the recitation of specific heterologous genes. The number and nature of the alternatives present is unclear. It is suggested that the claim be amended to recite the alternatives in a format such as "wherein the heterologous gene is selected from the group consisting of A, B, C, D and E".

Claim 10 is indefinite in the recitation of "a resistance-mediating gene". It is unclear what constitutes a resistance-mediating gene.

Claim 10 is indefinite in the recitation of "other medicinal, agronomical or other interest"; "other" implies that the selection marker and the resistance-mediating gene fall within one of these categories.

Claim 11 is indefinite in the recitation of "its functional equivalent". It is unclear whether "functional equivalent" refers to the polynucleotide or to the sequence of the promoter. If "functional equivalent" refers to the promoter, does "functionally equivalent" mean any level of promoter activity, or does it mean the same level of promoter activity?

Claim 11 is indefinite in the recitation of "encompassing". The scope of the claim is unclear. It is suggested that the claims be amended to recite "comprising" or "consisting of".

Claim 16 is indefinite in the recitation of the indefinite article "a" before "recombinant vector". It is suggested that the claims be amended to recite "the recombinant vector".

Claims 17, 18 and 19 are indefinite in the recitation of "a transgenic plant cell or protoplast". It is unclear whether the protoplast is transgenic.

Claims 18-19 and 21-23 are indefinite in the recitation of the indefinite article "a" before "transgenic". It is suggested that the claims be amended to recite "the transgenic".

Claims 23, 27, 31 and 39 recite dicotyledonous as well as monocotyledonous plant species. There is insufficient antecedent basis in claims 21, 25, 29 and 37 for dicotyledonous plant species.

Claims 24 and 28 are indefinite in the recitation of "controlled". It is unclear what "controlled" means since all expression is controlled.

Claim 24 and 28 are indefinite because it is unclear that the claimed methods result in the expression of the heterologous gene.

Claims 24, 28, 32 and 36 are indefinite in the recitation of "such". It is unclear whether that which follows "such" is a claim limitation; "such" also implies an undefined magnitude.

Claims 24, 28, 32, 36, 43, 51 and 53 are indefinite in the recitation of "a biotic or abiotic stress". It is unclear what constitutes types of stress biotic or abiotic refer to, since "a biotic or abiotic stress" encompasses all forms of stress.

Claims 28 and 36 are indefinite in the recitation of "to give rise to"; "to give rise to" implies movement.

Claim 32 and 36 are indefinite in the recitation of "the recombinant protein transformed by means of the DNA construct is expressed", since there is no recombinant protein transformation in the method. It is suggested that the claims be amended to recite "the DNA construct expresses the recombinant protein".

Claim 35 recites the limitation "process" as claimed in claim 33. There is insufficient antecedent basis in claim 33 for "process".

Claims 40-41, 43-44 and 49 provide for the use of a DNA construct and a plant V-ATPase promoter, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 51 and 52 are indefinite in the recitation of "which is". It is unclear whether "which is" refers to a plant cell, a protoplast, or both.

Claims 51-54 are indefinite in the recitation of "which is resistant". It is unclear whether the plants, plant cells and protoplasts are resistant prior to transformation, as a result of transformation, or as a result of the expression of the DNA construct.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 40-41, 43-44 and 49 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-7, 9-11, 13-17, 19, 24-26, 32, 34, 40 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Struve et al. (The Journal of Biological Chemistry, Vol. 265, No. 14, May 15, 1990, pages 7927-7932).

The claims are drawn to a DNA construct with a plant V-ATPase promoter or its functional equivalent operatively linked to a heterologous gene. The claims are also drawn to a recombinant vector, a microorganism, a transgenic plant cell or protoplast, a method for controlled expression of a heterologous gene, a method for producing a recombinant protein, and a stress resistant plant cell or protoplast.

Struve et al. teach a DNA construct with the dicotyledonous carrot plant V-ATPase promoter operatively linked to a heterologous GUS gene, said construct encompassing a second NOS promoter which can be regulated in a different manner, an expression cassette, a recombinant vector, and a shuttle vector, a microorganism transformed with the recombinant vector, a dicotyledonous transgenic carrot plant cell whose genome encompasses the DNA construct, and the use of the DNA construct for producing a recombinant GUS protein in transgenic carrot plant cells (page 7930 Figure 7 and Table I). The construct taught by Struve et al. is also a functional equivalent of a plant V-ATPase promoter. Since any expression of a heterologous gene operatively linked to a promoter is controlled, and since a biotic or abiotic

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stress encompasses any form of stress such as the stress a cell would encounter during transformation and cell culture, Struve et al. also teach a method a method for controlled expression of a heterologous gene, a method for producing a recombinant protein, and a stress resistant plant cell or protoplast.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 20-23, 25, 27-31, 33, 35-39, 41, 43-44 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Struve et al. (The Journal of Biological Chemistry, Vol. 265, No. 14, May 15, 1990, pages 7927-7932).

The claims are drawn to a monocotyledonous transgenic plant cell whose genome encompasses a DNA construct with a plant V-ATPase promoter operatively linked to a heterologous gene, to monocotyledonous and dicotyledonous transgenic plants whose genome encompasses a DNA construct with a plant V-ATPase promoter operatively linked to a heterologous gene, to a method for controlled expression of a heterologous gene in monocotyledonous plant cells, a method for controlled expression of a heterologous gene in plants, a method for producing a recombinant protein in monocotyledonous plant cells, a method for producing a recombinant protein in a plant, and a stress resistant plant.

The teachings of Struve et al. are discussed *supra*.

Struve et al. do not teach monocotyledonous transgenic plant cells, or monocotyledonous or dicotyledonous transgenic plants.

Given that methods for transforming and regenerating both monocotyledonous and dicotyledonous plants were well known in the art at the time of Applicant's invention, and given the success of Struve et al. in making transgenic carrot plant cells comprising a DNA construct with a plant V-ATPase promoter operatively linked to and expressing a heterologous GUS gene, it would have been *prima facie* obvious to one skilled in the art at the time the invention was made to transform and regenerate both monocotyledonous and dicotyledonous plants with a plant V-ATPase promoter operatively linked to a heterologous gene, for the purpose of producing a recombinant protein in a plant, without any surprising or unexpected results. Accordingly, one skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success. Thus, the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time the invention was made, especially in the absence of evidence to the contrary.

Remarks

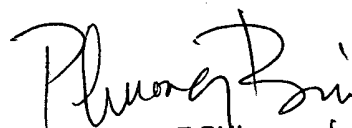
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (703) 605-1210. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (703) 306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4242 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

CC
April 21, 2002


PHUONG T. BUI
PRIMARY EXAMINER 4/22/02